We Claim:
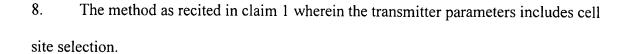
1.   A method for long long-range prediction of fading signals for high speed

downlink packet access from a base station to a mobile unit comprising the steps of:

generating a prediction of fast flat fading;

5   selecting transmitter parameters as a function of the prediction of fast flat fading.

2.   The method as recited in claim 1 wherein the transmitter parameters includes

coding rate.

10   3.   The method as recited in claim 1 wherein the transmitter parameters includes

modulation level.

4.   The method as recited in claim 1 wherein the transmitter parameters includes

power allocation.

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5.   The method as recited in claim 1 wherein the transmitter parameters includes

multi-codes.

6.   The method as recited in claim 1 wherein the transmitter parameters includes

20   number of rate matching bits required to fill a frame.

7.   The method as recited in claim 1 wherein the transmitter parameters includes

ARQ.

8.   The method as recited in claim 1 wherein the transmitter parameters includes cell site selection.

5   9.   The method as recited in claim 1 wherein the step of generating a prediction of fast flat fading further comprises uses maximum entropy method.

10.   The method as recited in claim 1 wherein the step of generating a prediction of fast flat fading further comprises uses Root-MUSIC method.

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11.   The method as recited in claim 1 wherein the step of generating a prediction of fast flat fading further comprises ues MMSE AR method.

12.   An apparatus for long long-range prediction of fading signals for high speed

15   downlink packet access from a base station to a mobile unit comprising:

a generating unit for predicting fast flat fading; and,

a fading adaptive unit for selecting transmitter parameters as a function of the prediction of fast flat fading.

20   13.   The apparatus as recited in claim 12 wherein the transmitter parameters includes coding rate.

14.   The apparatus as recited in claim 12 wherein the transmitter parameters includes modulation level.

15.   The apparatus as recited in claim 12 wherein the transmitter parameters includes

5   power allocation.

16.   The apparatus as recited in claim 12 wherein the transmitter parameters includes multi-codes.

10   17.   The apparatus as recited in claim 12 wherein the transmitter parameters includes number of rate matching bits required to fill a frame.

18.   The apparatus as recited in claim 12 wherein the transmitter parameters includes ARQ.

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19.   The apparatus as recited in claim 12 wherein the transmitter parameters includes cell site selection.

20.   The apparatus as recited in claim 12 wherein the generating unit uses maximum

20   entropy for predicting fast flat fading.

21.   The apparatus as recited in claim 12 wherein the generating unit uses Root-MUSIC for predicting fast flat fading.

22. The apparatus as recited in claim 12 wherein the generating unit uses MMSE AR

for predicting fast flat fading.

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